I claim:

1. A method for generating energy using a superconductor, comprising:

(a) generating a magnetic field having a field strength;

(b) locating the superconductor so it can reversibly interact with the magnetic field;

(c) causing the superconductor to change between a superconducting and a non-superconducting state, thus causing a change in the magnetic field strength; and

(d) coupling the magnetic field with a movable member responsive to the changing magnetic field strength.

2. The method of Claim 1, further comprising cooling and heating the superconductor through a transition temperature T_c defined by a transition between the states.

3. The method of Claim 1, further comprising cooling the superconductor by immersing it in a cooling bath and heating it by allowing it to emerge from the cooling bath.

4. The method of Claim 3, including using liquid nitrogen for the cooling bath and further including using a YBCO superconductor.

5. A method for generating energy using a superconductor, comprising:

(a) generating a magnetic field having a field strength;

(b) locating the superconductor so it can reversibly interact with the magnetic field;

(c) causing the superconductor to change between a superconducting and a non-superconducting state, thus causing a change in the magnetic field strength; and

(d) coupling the magnetic field with an electrical conductor responsive to the changing magnetic field strength, thus generating an electrical current in the electrical conductor.

6. A method for generating energy, comprising:
(a) generating a magnetic field with a magnet, the magnetic field having a magnetic field strength;
(b) disposing a superconducting article so it can interact with the magnetic field, the article having a non-superconductive state above T_c and a superconductive state below T_c;
(c) cooling and heating the superconducting article through T_c, thus causing a fluctuation in the magnetic field strength; and
(d) coupling the magnetic field with a movable member responsive to the fluctuating magnetic field strength.

7. The method of claim 6, further comprising allowing one of the magnet and the article to reversibly move between a near and a distal position relative to the other.

8. The method of Claim 7, including connecting the member with one of the magnet and the article which is allowed to move.

9. A method for generating energy, comprising:
(a) generating a magnetic field with a magnet, the magnetic field having a magnetic field strength;
(b) disposing a superconducting article so it can interact with the magnetic field, the article having a non-superconductive state above T_c and a superconductive state below T_c;
(c) cooling and heating the article through T_c, thus causing a fluctuation in the magnetic field strength; and
(d) coupling the magnetic field with an electrical conductor responsive to the fluctuating magnetic field strength, thus generating an electrical current in the electrical conductor.

10. The method of Claim 9, including generating the electrical current in the electrical conductor by exposing it directly to the fluctuating magnetic field strength.

11. The method of Claim 9, including generating the electrical current in the electrical conductor by coupling a piezoelectric body to one of the magnet and the superconducting article so that the piezoelectric body can respond to a change in a force therefrom, the change in force caused by the fluctuating magnetic field strength, and connecting the electrical conductor to the piezoelectric body.

12. The method of Claim 10, further comprising embedding the electrical conductor in the article.

13. The method of Claim 9, further comprising alternately exposing the article to and shielding it from a selected source of thermal radiation.

14. The method of Claim 9, further comprising alternately exposing the article to and shielding it from solar radiation in space.

15. The method of Claim 14, further comprising alternately exposing the article to and shielding it from solar radiation in space by enabling it to revolve so that it alternately faces towards and away from the sun.

16. The method of Claim 14, further comprising alternately exposing the article to and shielding it from solar radiation in space using a mask which alternately intercepts and passes the solar radiation.

17. The method of Claim 14, further comprising alternately exposing the article to and shielding it from solar radiation in space using a mask which has heat absorbing and heat reflecting surfaces.

18. The method of Claim 9, further comprising alternately exposing the article to and shielding it from solar radiation using a liquid crystal shutter capable of responding to feedback from the electrical current.

19. An engine comprising:

(a) a magnetic field;

(b) a superconducting article disposed so it can reversibly interact with the magnetic field, the superconductor having a transition between a superconducting state wherein it distorts the magnetic field and non-superconducting state wherein it does not distort the magnetic field; and

(c) a movable member responsive to changes between the distorted and non-distorted conditions of the magnetic field.

20. The engine of Claim 19, wherein the magnetic field originates at a first magnet, and the superconducting article is movable relative to the first magnet.

21. The engine of Claim 20, comprising also a second magnet attached to the movable member, and further comprising an electrical conductor adjacent the second magnet, so that the second magnet when in motion exposes the wire to a varying magnetic flux and electrically energizes the electrical conductor.

22. An engine comprising:

(a) a superconducting article having a transition temperature T_c;

(b) a magnet which can interact with the superconducting article so that the magnet has an undistorted magnetic field when the superconducting article is above T_c, and a distorted magnetic field when the superconducting article is below T_c;
(c) a means of changing the temperature of the superconducting article between temperatures above and below T_c; and
(d) an electrical conductor which produces an electrical current in response to the change of the magnetic field between the distorted and non-distorted conditions.

23. The engine of Claim 22, wherein the electrical conductor is directly exposed to the magnetic field.

24. The engine of Claim 22, including also a piezoelectric body responsive to a change in pressure exerted by one of the magnet and the article, the electrical conductor being connected to the piezoelectric body.

25. The engine of Claim 22, wherein the means of changing the article between temperatures above and below T_c is a movable mask.

26. The engine of Claim 25, wherein the movable mask has open and closed segments.

27. The engine of Claim 25, wherein the movable mask has heat absorbing and heat reflecting segments.

28. The engine of Claim 22, wherein the means of changing the temperature of the superconducting article between temperatures above and below T_c is a capability of the superconducting article to revolve between positions wherein it faces towards and away from the sun.

29. The engine of Claim 22, wherein the means of changing the temperature of the superconducting article between temperatures above and

below T_c is a liquid crystal shutter capable of responding to feedback from the electrical current.

30. The engine of Claim 23, wherein the electrical conductor is a coil.

31. The engine of Claim 23, wherein the electrical conductor is embedded in the superconducting article.

32. The engine of Claim 23, wherein the electrical conductor is a wire grid attached to a surface of the article.

33. A method for generating energy using an interaction between a superconductor and a magnetic field with a field strength, the superconductor being capable of a reversible transition between a superconducting and a non-superconducting state, the method comprising:

(a) cyclically effecting a plurality of the transitions between the states, thus causing the magnetic field strength at a given point to fluctuate; and

(b) coupling the magnetic field with a member which is reversibly movable in response to the fluctuation in magnetic field strength.

34. A method for generating energy using an interaction between a superconductor and a magnetic field with a field strength, the superconductor being capable of a reversible transition between a superconducting and a non-superconducting state, the method comprising:

(a) cyclically effecting a plurality of the transitions between the states, thus causing the magnetic field strength at a given point to fluctuate; and

(b) coupling the magnetic field with an electrical conductor which generates an alternating electrical current in response to the fluctuations in magnetic field strength.